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REMARKS

Claims 1 and 12 have been amended to more clearly define Applicants' invention. In particular, these claims have been amended to recite that the thermoplastic glazing panel has a haze value of about 50% or more. Support for this amendment can be found throughout the present specification, such as paragraph [0041], and claims as originally filed, including claims 10 and 24. No new matter has been added. Claims 10 and 24 have been cancelled in view of this amendment. In addition, claims 11 and 25, which had originally depended from claims 10 and 24 respectively, have been amended to depend from claims 1 and 12.

Furthermore, since claims 37-38, 44-47, and 53-62 were withdrawn in response to a restriction requirement, claims 39 and 48, which had depended from withdrawn claims 37 and 44 respectively, have been amended to be in independent form, including all of the limitations of the withdrawn base claims. Also, new claims 63-77 have been added. Claim 63 includes the features of withdrawn claim 38 and depends directly from amended independent claim 39. Claims 64-66 include the features of withdrawn claims 45-47 and depend, directly or indirectly, from amended independent claim 48. Finally, claims 67-76 include the features of withdrawn claims 53-62 and depend, directly or indirectly, from amended independent claim 48. Thus, the new claims are fully supported by the present specification and claims as originally filed, and no new matter has been added.

Therefore, claims 1-9, 11-23, 25-36, 39-43, 48-52, and 63-77 are pending.

Rejection of Claims under 35 U.S.C. § 102

Phillip

The Examiner has rejected claims 1, 2, 8, 9, 12, 13, 22, and 23 under 35 U.S.C. § 102(b) as being anticipated by Phillip (U.S. Patent No. 5,027,574).

In paragraph 3 of the Office Action, the Examiner states that Phillip teaches a first

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sheet (4) and a second sheet (6) that can be made of plastics. The Examiner also states that two or more supporting members (23, 40, and 42) are there between (per instant claim 2 or 12) and that the panel can be filled with aerogel.

Applicants respectfully disagree. Regarding claims 1 and 12, as amended, each of these claims relates to a translucent glazing panel comprising a thermoplastic panel and hydrophobic aerogel particles. The advantages of such aerogel particles are described in the present specification (see, for example, paragraph [0028]). Furthermore, the translucent glazing panel has a haze value of about 50% or more.

By comparison, while Phillip relates to a thermally insulating structure and further states that the "invention can be used with transparent silica aerogels" (see column 7, lines 20-31), there is no disclosure anywhere in Phillip of a panel which includes hydrophobic aerogel particles. Furthermore, Phillip also does not disclose a translucent glazing panel having the haze value specified in claims 1 and 12, particularly since Phillip specifically states that "transparent" aerogels may be used.

Therefore, Applicants believe that claims 1 and 12 are not anticipated by Phillip. Claims 2, 8, 9, which depend directly or indirectly from claim 1, and claims 13, 22, and 23, which depend directly or indirectly from claim 12, recite further embodiments of the present invention and, for at least the reasons discussed above, are also not anticipated by this reference.

Applicants therefore believe that claims 1, 2, 8, 9, 12, 13, 22, and 23 are not anticipated by Phillip and respectfully request that this rejection be withdrawn.

Regarding new claims 63-77, these claims depend directly or indirectly from claims 39 and 48, which have not been rejected over Phillip. Therefore, Applicants believe that new claims 63-77 are also not anticipated by this reference.

Martin

The Examiner has rejected claims 1, 2, 8, 9, 12, 13, 22, 23, 26, 28, 29, 35, 36, and 38-43 under 35 U.S.C. § 102(b) as being anticipated by Martin (U.S. Patent No. 5,156,895).

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In paragraph 4 of the Office Action, the Examiner states that Martin teaches an insulating panel that is placed between two U-shaped members (98, 100 or 126, 132). Referring to Figures 7A-7C of Martin, the Examiner states that it is disclosed that an aerogel composition is used to fill a cellular structure and the outer members are used to enclose this structure. The Examiner notes that this rejection is made to specifically address claims 26, 28, 29, 35, and 36, but further states that the reference also reads on the other claims.

Applicants respectfully disagree. Applicants note that the Examiner has included claim 38 in the rejection. Since this claim has been withdrawn in view of a restriction requirement, Applicants have assumed this claim has been included inadvertently. If this assumption is incorrect, clarification is requested.

Regarding claims 1, 12, 26, and 39, each of these claims specifically recites an insulation panel comprising hydrophobic aerogel particles. By comparison, while Martin relates to "a cellular support structure into which gels are formed" (see column 1, lines 56-57), these gels are used to form a "thermal insulating microporous monolithic aerogel matrix which is imbedded in the support structure" (see column 1, line 68 to column 2, line 2). Thus, the gel is not in the form of particles but is rather a monolithic structure. This is further supported by the title, which describes a process in which a monolithic aerogel insulation is "cast and dried within a support structure". This method is specifically described relating to Figures 7A-7C in which, after the support structure is formed, "sol is poured into the cells and allowed to gel and age there" (see column 6, lines 19-20). There is no disclosure of the use of aerogel particles, and, in particular, hydrophobic aerogel particles.

Therefore, Applicants believe that claims 1, 12, 26, and 39 are not anticipated by Martin. Claims 2, 8, 9, which depend directly or indirectly from claim 1, claims 13, 22, and 23, which depend directly or indirectly from claim 12, claims 28, 29, 35, and 36, which depend directly or indirectly from claim 26, and claims 40-43, which depend directly or indirectly from claim 39, recite further embodiments of the present invention and, for at least the reasons discussed above, are also not anticipated by this reference.

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Applicants therefore believe that claims 1, 2, 8, 9, 12, 13, 22, 23, 26, 28, 29, 35, 36, and 38-43 are not anticipated by Martin and respectfully request that this rejection be withdrawn.

Regarding new claims 63-77, claim 63 depends directly from claim 39 and recites further embodiments of the present invention. Therefore, for at least the reasons discussed above, Applicants believe that claim 63 is also not anticipated by Martin. Claims 64-77 depend directly or indirectly from claim 48, which has not been rejected over Martin. Therefore, Applicants believe that new claims 64-77 are also not anticipated by this reference.

Rejection of Claims under 35 U.S.C. § 103(a)

Erb in view of the Article "Glazings with Granular Aerogels"

The Examiner has rejected claims 1-25 under 35 U.S.C. § 103(a) as being unpatentable over Erb (U.S. Patent No. 4,443,987) in view of the article "Glazings with Granular Aerogels" by Wittwer et al., SPIE Vol. 2255, pages 718-727.

In paragraph 6 of the Office Action, the Examiner states that Erb teaches a polycarbonate glazing containing three sheets (4, 64, 69) with rib supports running there between substantially as presently claimed and shown in Figures 5 and 6 of the present application. However, the Examiner states that Erb fails to teach insulating aerogels within the panel, but does teach that the panel is insulating due to the dead air within the channels.

Therefore, the Examiner relies on the article, which the Examiner states discloses that it is known to include aerogels within glazing structures in order to supply the desired insulation properties thereto. The Examiner therefore concludes that it would have been obvious to one having ordinary skill in the art at the time the invention was made to further include, or substitute, insulating aerogels for the insulating dead air with the channels of the glazing, as taught by the article, for the purpose of providing the desired properties thereto, motivated by the fact that both references are drawn to insulating glazing units and insulation is a primary goal thereof.

Applicants respectfully disagree. Regarding claims 1 and 12, as amended, each of

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these claims relates to a translucent glazing panel comprising a thermoplastic panel and hydrophobic aerogel particles. The translucent glazing panel has a haze value of about 50% or more.

By comparison, Erb relates to a unitary coextruded panel which combines light transmitting and light reflecting properties for use as a window of a structure. This panel includes a plurality of ribs extending between inner and outer faces, some of which are transparent and some of which are opaque, and these ribs are geometrically placed to provide the desired light transmitting/light reflecting properties. The spaces are filled with dead air (see column 3, lines 17-23 and column 6, lines 57-60). However, there is no disclosure, teaching, or suggestion in Erb of the use of aerogel particles, and, in particular, hydrophobic aerogel particles. Furthermore, since no particles are used, there is no teaching or suggestion of a translucent panel having a haze value of 50% or more.

The Examiner therefore relies on the above described article, stating that this reference shows that aerogels can be used in glazing applications. However, while this article shows that aerogels, including hydrophobic aerogels, can be used in glazing systems, there is no teaching or suggestion in this reference of a translucent panel having a haze value of 50% or more, as recited in the present claims. Thus, the article cannot cure the deficiency of Erb.

Therefore, Applicants believe that claims 1 and 12 are patentable over Erb in view of the article discussed above. Claims 2-9 and 11, which depend directly or indirectly from claim 1, and claims 13-23 and 25, which depend directly or indirectly from claim 12, recite further embodiments of the present invention and, for at least the reasons discussed above, are also patentable over this combination of references. Claims 10 and 24 have been cancelled, making the rejection of these claims moot.

Applicants therefore believe that claims 1-25 are patentable over Erb in view of the reference discussed above and respectfully request that this rejection be withdrawn.

Regarding new claims 63-77, these claims depend directly or indirectly from claims 39 and 48, which have not been rejected over Erb in view of the article discussed above. Therefore, Applicants believe that new claims 63-77 are also patentable over this combination of references.

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Martin

The Examiner has rejected claims 3-7, 10, 11, 14-21, 24, 25, 27, 30-34, and 48-52 under 35 U.S.C. § 103(a) as being unpatentable over Martin (U.S. Patent No. 5,156,895).

In paragraph 7 of the Office Action, the Examiner states that Martin teaches the invention substantially as recited except for the panel being formed of thermoplastic material and references the 35 U.S.C. § 102 rejection above. However, the Examiner states that Martin discloses that the panel can be made by materials common in the trade and that the materials for the panel are substantially unlimited. Therefore, the Examiner concludes that it would have been obvious to one having ordinary skill in the art at the time the invention was made to form a panel from polycarbonate motivated by the fact that Martin teaches the materials for forming the panel are unlimited and are formed of materials in the art. The Examiner adds that Erb, as discussed above, is a teaching reference to the fact that polycarbonates are known materials used in the glazing art.

Applicants respectfully disagree. Regarding claims 3-7, 10, 11, 14-21, 24, and 25, claims 1 and 12 relate to a translucent glazing panel comprising a thermoplastic panel and hydrophobic aerogel particles. However, as discussed in more detail above, there is no disclosure, teaching, or suggestion in Martin of the use of aerogel particles, and, in particular, hydrophobic aerogel particles. Instead, Martin teaches a monolithic structure. Thus, while the panel of Martin can be made using materials common in the trade, including polycarbonates as taught by Erb, these are not the panels of the present invention.

Therefore, Applicants believe that claims 1 and 12 are patentable over Martin. Claims 3-7, 11, which depend directly or indirectly from claim 1, and claims 14-21 and 25, which depend directly or indirectly from claim 12, recite further embodiments of the present invention and, for at least the reasons discussed above, are also patentable over this reference. Claims 10 and 24 have been cancelled, making the rejection of these claims moot.

Regarding claims 27 and 30-34, claim 26 relates to an insulating glazing system comprising two U-shaped elements and an insulating panel which comprises hydrophobic aerogel particles. As discussed in more detail above, there is no disclosure, teaching, or

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suggestion in Martin of the use of aerogel particles, and, in particular, hydrophobic aerogel particles. Instead, Martin teaches a monolithic structure. Furthermore, there is no disclosure, teaching, or suggestion in Martin of a glazing system having two U-shaped elements. Thus, while the panel of Martin can be made using materials common in the trade, including polycarbonates as taught by Erb, these are not the panels of the present invention.

Therefore, Applicants believe that claim 26 is patentable over Martin. Claims 27 and 30-34, which depend directly or indirectly from claim 26, recite further embodiments of the present invention and, for at least the reasons discussed above, are also patentable over this reference.

Regarding claims 48-52, claim 48, as amended, relates to an insulating glazing system comprising two U-shaped elements and an insulating panel which comprises hydrophobic aerogel particles. As discussed in more detail above, there is no disclosure, teaching, or suggestion in Martin of the use of aerogel particles, and, in particular, hydrophobic aerogel particles. Instead, Martin teaches a monolithic structure. Furthermore, there is no disclosure, teaching, or suggestion in Martin of a glazing system having two U-shaped elements. Thus, while the panel of Martin can be made using materials common in the trade, including polycarbonates as taught by Erb, these are not the panels of the present invention.

Therefore, Applicants believe that claim 48 is patentable over Martin. Claims 49-52, which depend directly or indirectly from claim 48, recite further embodiments of the present invention and, for at least the reasons discussed above, are also patentable over this reference.

Applicants therefore believe that claims 3-7, 10, 11, 14-21, 24, 25, 27, 30-34, and 48-52 are patentable over Martin and respectfully request that this rejection be withdrawn.

Regarding new claims 63-77, claim 63 depends directly from claim 39, which has not been found rejected over Martin. Therefore, Applicants believe that new claim 63 is also patentable over this reference. Claims 64-77 depend either directly or indirectly from claim 48 and recite further embodiments of the present invention. Therefore, for at least the reasons discussed above, Applicants believe that new claims 64-77 are also patentable over this reference.

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Claims 39 and 48

In paragraph 8 of the Office Action, the Examiner states that claim 48 needs to be put into independent form, including all of the limitations of the preceding claim since it depends from a non-elected claim.

In response, and as discussed above, claim 48 has been so amended. In addition, Applicants have also amended claim 39 in a similar way since it also depended from a non-elected claim.

Conclusion

In view of the foregoing remarks, Applicants believe that this application is considered to be in good and proper form for allowance, and the Examiner is respectfully requested to pass this application to issue. If, in the opinion of the Examiner, a telephone conference would further expedite the prosecution of the subject application, the Examiner is invited to call the undersigned.

Respectfully submitted,

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